

frightened by the elephant, but I passed several sambhur at very close range without causing them any alarm.

MAYMYO, BURMA.

F. J. MUSTILL.

November 5, 1938.

IV.—DERIVATION OF THE NAME SELADANG

In the very interesting article by Mr. Hubback on the Malayan Gaur or Seladang a derivation of the name seladang is suggested on page 10. It seems possible that the name was imported into Malaya with the animal, as it is suggested that the animal came in from the North. The Manipuri word for the mithun (*Bibos frontalis*) is *sandang* and the Kuki word for the same animal is *sel*. Further research might reveal that the word is similar in other languages.

IMPHAL,

MANIPUR STATE,

C. GIMSON.

ASSAM.

December 27, 1938.

V.—SORE NECK IN SAMBAR.

The Theory of 'Atavistic Degeneracy'.

In my article on the Malayan or Burmese Sambar (*Rusa unicolor equinus*) which was published in the *Journal of the Bombay Natural History Society*, vol. xxxix, No. 2, dated 15th April 1937, I touched at considerable length on the subject of the 'Sore Neck in Sambar'. Subsequently Mr. S. R. Daver of Jagdalpur, Bastar State, India in an interesting article entitled 'Cause of Sore Neck in Sambar' (*Journal*, vol. xl., pp. 118 to 122) gave his views on the subject. He stated that he had the good luck to read a passage in a small book *The Story of Animal Life* by Mr. B. Lindsay which explains the cause of 'Sore Neck' in Sambar in such a manner that it *leaves no room for any doubt*. Mr. Daver states that the fact of the matter is that the Sambar, although sometimes described as the 'Monarch of the Dale', does not carry any blue blood in his veins. He has a much humbler origin than people think. The 'Sore Neck', Mr. Daver says, is nothing but a badge of an inferiority complex which sambar and other higher forms of animals carry round their necks to remind them for all time that they were once marine animals. When the Himalayas were under water these animals including the ancestors of the Sambar perhaps, were swimming in the shallow sea. Mr. Daver says that he has

seen several sambar at close quarters during the course of 20 years of his roaming in the jungle but has never seen a single specimen of a sambar with a 'sore neck'. In biological language 'sore neck' according to Mr. Daver, is an instance of 'atavistic degeneracy'. Mr. Daver quotes Mr. Lindsay:

'What we see as a bare patch and a sore on the necks of the animals used to be a place where gills were attached when these animals were leading a marine life. The disease is called "cervical fistula".'

Mr. Daver goes on to quote another extract from Mr. B. Lindsay's book as follows:

'Nor do we need to go into the nursery to find links with our inferiors. Much, indeed far too much, has been written of late years about "atavistic degeneracy", that is to say, degeneracy which imitates the characteristics of our forefathers. Many things which are classed as diseases, whether of the body, mind, or moral nature may be explained in this way. Take the gills which as we have stated exist in all the vertebrates but not in the adult of the highest groups. In a sickly individual even amongst the highest vertebrates, traces of this are sometimes seen existing in the adult as a gap or open space in the neck called by the medical man "cervical fistula": this is an instance of degeneracy in the body. Take, for another instance, the kleptomaniac who snatches up everything he takes—a degeneracy of the mind, a relic of savage nature out of place in civilized man. Yet the gill space is an ancestral feature which has its right time to appear though it is out of place in the adult: and the "want to snatch" stage, as we have already seen is quite natural in the young child.'

To understand clearly the development, position, and modification of gills in the modern animal Mr. Daver quotes another passage from Mr. B. Lindsay's book, as follows:

'The classes of the vertebrata are fishes, amphibia, reptiles, birds, and mammals. We used to learn that these fishes had gills, and amphibia gills for a time; but to be strictly accurate, we must say that fishes have gills and all the rest of the vertebrates have gills for a time. There is no exception to this rule not even among the highest vertebrates. But in these vertebrates which stand higher in the scale of life than amphibia, viz. reptiles, birds, and mammals, these gills are never brought into use. They only exist in the early embryo and afterwards disappear, giving rise by their modification to other structures. Strange to say one of these structures is the ear. This takes its origin from one of the gill clefts or spaces. The Eustachian tube which communicates between ear and nose is part of this cleft; and the little bones which are inside in the ear represent the bones of the "gill cleft". For in fishes, bones support each gill and are connected together to form a complex arrangement. In the higher vertebrates, which possess gills only in the embryo, this gill skeleton is much modified and persists as a bone, its hyoid bone supporting the tongue. The gills of vertebrates arranged in successive pairs along the throat, are "performing gills, that is to say they consist essentially of holes or spaces which pass right through the wall of the throat."

Since reading Mr. Daver's theories in the *Journal* regarding the cause of 'sore neck in sambar' I have tried but failed to obtain a copy of Mr. Lindsay's book. However, I also had the luck to come upon an article entitled 'The Concept of Atavism', which it appears to me does not quite uphold Mr. B. Lindsay's theory or Mr. Daver's explanation that the sore in question is a gill. The salient portions of the article in question are herewith reproduced.

'During the days when biologists were sedulously engaged in supplying the finishing touches to the house that Darwin built, it was the usual practice

to regard every possible arrest in development or unusual character of an organism as the persistence or recurrence of an erstwhile normal feature of the particular organisms, ancestor, or ancestors. Such a reversion to the presumed ancestral condition was termed an "atavism" from the Latin "atavus", an ancestor. This concept and the term expressing it, abounds in the writings of nineteenth century biologists. Haeckel's "Biogenetic Law" really represents a generalized synoptic version of this concept applied to a particular case, and calculated to resume a certain supposed routine of phenomena under a particular law. Today few biologists believe that in its ontogenetic development any animal actually repeats the developmental stages of its phylogenetic history. In development the organism apparently passes only through those stages of development which are akin to similar stages passed through in the ontogenetic development of its ancestors; and this is essentially what Van Baer said in his "Hypothesis of Recapitulation", which is not to be confused with the so-called Biogenetic Law. In development the organism does not repeat the adult stages of its ancestors, but only those stages of development through which its ancestors as a whole have more or less in common passed. This, as Van Baer originally pointed out, is why the early stages of related animals resemble one another more closely than do the differentiated adults. Modern recognition of these facts has brought the Biogenetic Law into disrepute. The conception of Atavism however, persists. Reference to many modern texts on embryology, general biology, and the writings of a fair number of morphologists, will supply examples of the uncritical usage of this term. One recent work by a notable worker has a section entitled "Reappearance of Lost Ancestral Structures in Man" and as the example of such structures we are given the gill pouches . . . (of) the early embryo . . . (which) may . . . persist and form an open fistula on the side of the neck". Surely it is clear that such a fistula is due to the mal-development or arrest in development of an embryonic character of the individual and not to the reappearance of a character which the species and class has lost but which may have been present in some remote phyletic ancestor. In this connection it is worth drawing attention to the fact that the conventionally accepted homology between the gill pouches or arches of fishes and the branchial arches of mammals is open to serious question.

The occasional occurrence of a tail in man or of an azygos lobe of the right lung, microcephaly, large canine teeth, the fourth molar, the divided molar bone, the "third trochanter" of the femur, the entepicondylar foramen of the humerus, super numerary mammae, and many other characters have been and still are cited as examples of atavism. Yet in every case it can be conclusively shown that such characters are not upon *any view* to be regarded as reversions to an ancestral condition. Changes in development and in development rates resulting in persistence, suppression, reduction, hypertrophy, duplication, multiplication of structures and normal variability are processes quite adequate to account for the so called "atavisms" which are commonly cited. In short it is more than doubtful whether the concept of atavism has any counterpart in reality; and I think it will be agreed that unless the concept can be applied to some demonstrable type of phenomenon it were better that the term were altogether dropped from the vocabulary of the biologist.'

It seems to me therefore that we can hardly accept as correct Mr. B. Lindsay's theories which Mr. Daver has supported in his article about the sambar sore being a gill and its appearance being due to atavistic degeneracy. There is nothing degenerate about the Malayan Sambar as we hunters know full well. It really is not a bare patch at all but an area oozing out. . . . something, a scent, a perfume gland. Black buck, elephants, and camels have them; whilst serow have them between the toes. It seems strange nevertheless that although there must be quite a large number of experienced scientists and naturalists in the country apart from experienced sportsmen none of them have as yet succeeded in discovering why that circular sore on the sambar's neck is there,

always in the same spot. Can it be a secretory gland? No doubt we will get to the bottom of this matter in the near future.

KALAW,

SHAN STATES,

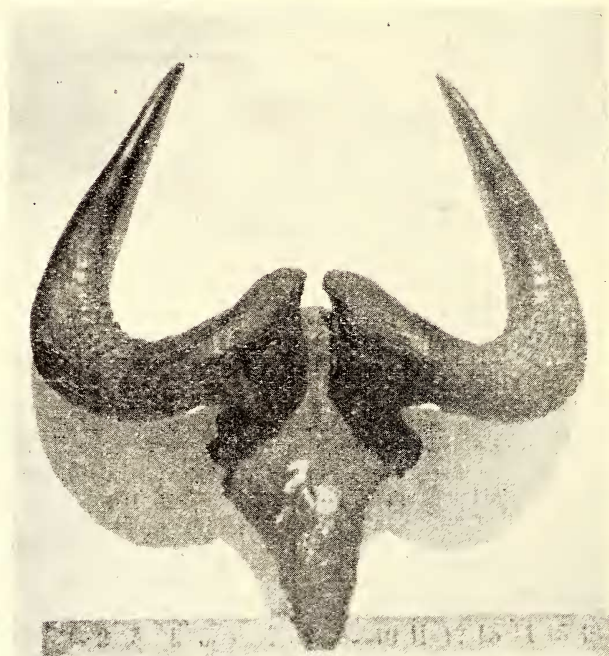
BURMA.

October 1938.

W. S. THOM.

VI—THE RECORD THAKIN HEAD.

(With a photo).



I enclose herewith a photo of a thakin head which has recently come into my possession. The head was brought down by a Mishmi tribesman several years ago and came into my possession through the courtesy of Mr. F. P. O'Connor of Itakhooli Tea Estate.

The frontal part of the horns are extremely gnarled and ridged and this point combined with close proximity of the two tips indicates the great age of the beast.

The measurements—very carefully taken and checked by a friend—are as undernoted:—

<i>Length.</i>	<i>Girth.</i>	<i>Tip to tip.</i>	<i>Widest spread.</i>
25½ Rt. }	15 }	8	17
25 Lt. }	15 }		

Unless Rowland Ward's Records contain measurements which can beat it this head would appear to be the record.